B.4 ORIGINS OF SOLAR SYSTEMS

1. Scope of Program

This program element solicits basic research proposals 1) to conduct scientific investigations related to understanding the formation and early evolution of planetary systems, and 2) to provide the fundamental research and analysis necessary to detect and characterize other planetary systems. These investigations may involve analytical and numerical modeling, laboratory research, and observational studies in the following areas: star formation and the relationship to planetary system formation, solar nebula processes, accumulation and dynamical evolution, analysis of primitive materials, and the detection of other planetary systems. The investigations supported through this NRA should directly support the goal of understanding the formation of planetary systems.

Proposals to the Origins of Solar Systems Program should clearly fall into one or more of the following categories:

- Investigations to detect and characterize extra-solar planets;
- Observations related to the formation and evolution of planetary systems;
- Theoretical investigations related to the formation and evolution of planetary systems; and
- Studies of chemical and atomic processes related to the formation of planetary systems.

Note that the first three of these research areas are similar to those for program A.12, *Terrestrial Planet Finder Foundation Science*, in this NRA and will be evaluated by the same review panel. Proposals judged relevant to the TPF program will be funded by that program.

The Origins program realizes the existing potential for complementary interdisciplinary efforts to solve key scientific questions. To achieve this goal, proposals are encouraged that involve joint research efforts by investigators from different scientific communities. Interdisciplinary investigations may include, for example, studies of nebular chemistry and dynamics to understand the composition of primitive volatile-rich Solar System bodies, or collaborations between observational astronomers and modelers to study the initial collapse of a protostellar cloud to form a nebula. Proposals that involve joint efforts may be submitted as separate proposals from participating institutions for each of their respective parts of the investigation or as an a single all-inclusive proposal. With respect to the first option, the separate proposals must reference the lead proposal by name and PI; for the second option, note that it is OSS policy that all subcontracts for work at an organization other than the lead organization must be handled by the lead institution (see Section 2.3.11(b) in the *NASA Guidebook for Proposers* for further details).

Proposals for topical conferences, workshops, symposia, or other new initiatives related to the Origins program are also solicited through this NRA, preferably as an additional element in a standard research proposal. For more information about the type of research supported by this program, abstracts for currently funded investigations are available at http://research.hq.nasa.gov/code_s/archive.cfm.

Note that to enable the NASA Office of Space Science to properly evaluate the relevance of proposals submitted to its programs, as well as to track its progress towards achieving its goals as mandated by the Government Performance Review Act (GPRA), all research supported by NASA's programs must now demonstrate its relationship to NASA Goals and Research Focus Areas (RFAs) as stated in the latest version of its *Strategic Plan* (follow links to "Publications" from the Web site http://spacescience.nasa.gov/); see also the discussion in Section I of the *Summary of Solicitation* of this NRA. Therefore, all proposers to this program element are asked to state their perception of this relevance in terms of the Goals, Science Objectives, and RFAs given in Table 1 found in the *Summary of Solicitation*. In particular, this program element is designed to help fulfill RFAs 1(a), (b), and (d), RFA 2(a), and RFA 3(b) of Goal II of Solar System Exploration science theme, as well as RFAs 2(a) and (b), RFAs 3 (a), (b), (c), and (d) for Goal II of the Astronomical Search for Origins science theme.

2. Programmatic Information

It is estimated that the funding level for this program for Fiscal Year 2005 will be approximately $6.9M and that this level of funding will support approximately 100 research investigations, including both new proposals and in-progress multiple year proposals. Of this amount, approximately $2.5M will be used to support searches for extrasolar planets. For administrative purposes the search for extrasolar planet investigations will be managed by the Astronomy and Physics Division.

As a change from past practices for this program, and in anticipation of a new master data base for OSS research awards that is being implemented on an evolving basis, *Annual Progress Reports* (called "Progress" or "Status" Reports in previous research solicitations) for ongoing multiple-year awards are no longer required at the time that new proposals are due. Instead, a single *Annual Progress Report* will be due no later than 60 days in advance of the anniversary date of the award and is to be submitted as an attachment to an E-mail message to the Program Officer for this program. Note that as an additional change from past practice, a revised budget for any remaining years of an approved award is neither necessary nor expected; the multiple year budget approved at the time of the original award is considered binding barring the development of unforeseen, extreme issues (see Section D.4 of Appendix D of the *Guidebook for Proposers* for further details).

- *Instrumentation*

The *Planetary Major Equipment* program described in Appendix B.12 of this NRA

allows proposals for upgrading the analytical, computational, telescopic, and other instrumentation required by investigations for certain programs sponsored by the Solar System Exploration Division, including this one. New, analytical instrumentation requests, as well as requests for upgrades to existing instruments, costing more than $25,000 should be identified and requested in a special section of each proposal, to be titled "Major Equipment Request." However, note that a Planetary Major Equipment proposal must be affiliated with a "parent" OSS research proposal in order to be considered; see Appendix B.12 for details.

IMPORTANT INFORMATION

The *Summary of Solicitation* of this NRA points out that NASA Headquarters now uses a single, unified set of instructions, entitled *NASA Guidebook for Proposers Responding to NASA Research Announcements*, that provides detailed guidance for the preparation and submission of proposals to most of its NRA's. By reference the current edition, *Guidebook for Proposers– 2004*, is incorporated into this Office of Space Science solicitation and is accessible by linking through the menu item "Helpful References" at the Web site http://research.hq.nasa.gov or it may be directly accessed at http://www.hq.nasa.gov/office/procurement/nraguidebook/. Proposers to this Program Element are urged to familiarize themselves with this document, in particular its Chapters 1, 2, and 3, before preparing a proposal. This NRA's *Summary of Solicitation* also contains the schedule and instructions for the electronic submission of both a *Notice of Intent* (NOI) to propose, as well as a proposal's *Cover Page/Proposal Summary* that also includes a required *Budget Summary* for the proposal, and the mailing address for the submission of proposals.

Questions about this program element may be directed to the cognizant Program Officer:

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